

CLAIMS

1. (Currently Amended) A hydrogen gas generating system, comprising:
a membrane electrode assembly including an anode, a cathode and an ionically conductive membrane there between;
electrical connections for applying electrical power from a source of electrical power to said cathode and anode; and
a non-circulating transport layer of wicking material for transferring a water/fuel mixture by capillary action ~~through~~ from a first end portion of the layer of wicking material from a source of the water/fuel mixture to said anode to generate hydrogen gas and for transferring through a second portion of the layer from the first portion to a vent to transport gases released by consumption of the water/fuel mixture away from the anode by capillary action to a vent through a second end portion of the layer of wicking material, the second end portion of the layer acting as a barrier to the transport of the water/fuel mixture to the vent.
2. (Currently Amended) The ~~invention~~ hydrogen gas generating system of claim 1, wherein said non-circulating transport layer of wicking material further comprises:
the first end portion of the layer of wicking material is in contact with the water/fuel mixture for transporting the water/fuel mixture to the anode and the second end portion of the layer of wicking material is in contact with said first end portion of the layer of wicking material for collecting gases therefrom.
3. (Currently Amended) The ~~invention~~ hydrogen gas generating system of claim 2, wherein areas of said first and second end portions of the layer of wicking material are interspersed along the contact between the first and second end portions thereof.
4. (Currently Amended) The ~~invention~~ hydrogen gas generating system of claim 2, wherein said areas of said first and second end portions of the layer of wicking material are interlaced.

5. (Currently Amended) The ~~invention~~ hydrogen gas generating system of claims 2 or 3, wherein

said first end portion of the layer of wicking material is hydrophilic; and

said second end portion of the layer of wicking material is hydrophobic,

whereby the second end portion of the layer of wicking material acts as the barrier to the transport of the water/fuel mixture, being transported in said first end portion of the layer of wicking material, ~~from being transported~~ to the vent for the released gases.

6, 7. Canceled.

8. (Currently Amended) The ~~invention~~ hydrogen gas generating system of claims 2 or 3 wherein the ~~non-circulating fuel transport system layer~~ further comprises comprising:

a replaceable fuel/water canister for containing the fuel/water mixture in contact with the first end of the layer of wicking material; and

a compartment receiving the released ~~eases-gases~~ from the second end of the wicking layer, under pressure resulting from the release of the gases by consumption of the water/fuel mixture, for pressurizing the replaceable water/fuel mixture canister.

9-20. Canceled.

21. (Currently Amended) The ~~invention~~ hydrogen gas generating system of claim 1 further comprising:

a cooling system within said membrane electrode assembly for recovering liquid from gases produced by said membrane electrode assembly; and

a layer of hydrophilic wicking material for returning the condensed water/fuel mixture to said cathode.

22-42. Canceled.